

FDA02™

FDU02™



Premium Optical Fingerprint Sensors for hardware integration



SecuGen Optic Module, OPP03

Typical Applications

- Fingerprint door locks
- Physical access control
- Time attendance systems
- ATMs, POS and kiosks
- Computers and peripherals

SecuGen Sensors are Proven to Resist

- Shock and impact
- Scratches
- Contaminants (sweat, dirt, oil, etc.)
- Cold and heat
- Humidity
- Electrostatic discharge



FDA02

Fingerprint sensor with a built-in CPU and embedded algorithm, designed for integration into stand-alone applications that do not require connection to a computer.

Includes

- SecuGen OPP03™ optic module & cable
- On-board CPU
- 1 MB SRAM
- 4 MB flash memory (supports 4,400 users)

New Features & Improvements

- Low power consumption
- Large user (fingerprint template) capacity
- Improved sensor interface stability
- Improved embedded algorithm
- Fingerprint Quality Indicator for image quality feedback and improved acceptance rates
- 1:N (one to many) matching capability
- Dynamic Exposure Control automatically adjusts sensor for optimized fingerprint quality
- Works under direct, bright light (such as sunlight)
- Accepts wet fingerprints

SecuGen Sensors are...

Durable

SecuGen® fingerprint sensors feature a virtually indestructible sensor prism. From the sensor surface to the internal lens and electronic components, SecuGen's fingerprint sensors are designed to be strong and dependable to deliver consistent performance for a wide range of applications.

Accurate

SecuGen sensors produce very high accuracy rates. An innovative optic design yields distortion-free images from which data points are used for matching. High quality images mean greater precision, less false rejection and acceptance, and better overall performance.

The preferred choice by OEMs around the world

Years of real-world use, integration into thousands of products, and use by real-world people have all proven the quality and reliability of SecuGen sensors.

SecuGen's compact, rugged sensors have been shown to outperform other optical and semiconductor sensors, and yield low FRR and FAR, even in extreme environments that range from subfreezing to arid and tropical climates.

FDU02

Fingerprint sensor designed for integration into USB devices, such as PC peripherals.

Includes

- SecuGen OPP03™ optic module
- USB interface board
- USB cable

New Features & Improvements

- Uses USB bulk-mode at lower bandwidth
- Multi-Device Support allows multiple USB devices to be connected at the same time
- Device Recognition capability uses unique, internal serial number to identify device

New Features & Improvements of OPP03 Optic Module

- Reduced error rates on problematic fingerprints
- Higher signal-to-noise ratio
- Ultra-precise resolution
- Greater Sensor-to-Sensor Consistency

Maintenance-free

Unlike semiconductor-based sensors and competitive optical sensors in the market, SecuGen's sensor is made with a hard quartz-like material that resists scratches, stress and corrosion. There are no coatings to maintain or disturb. Additionally, the optic parts are tightly assembled so that if the sensors are ever dropped, there is no need for re-calibration.

Cost-effective

SecuGen sensors are built to last, thus eliminating costly replacements. Additionally, SecuGen develops and manufactures its own fingerprint sensors and guarantees top-level quality with the longest warranty in the industry.

The FDA02 and FDU02 fingerprint sensors now feature second-generation optic modules that work even better with dry and difficult-to-use fingerprints, thanks to a higher signal-to-noise-ratio, higher contrast and higher resolution.

Both the FDA02 and FDU02 are fully backwards-compatible with applications made for older models, FDA01 and FDU01.

Durable, accurate, versatile and affordable. SecuGen® sensors are the best choice for the most demanding fingerprint recognition applications.

FDA02™ Fingerprint sensor with CPU

Physical

Dimensions (optic module)	2.4" x 0.8" x 1.3" (62 x 21 x 32 mm)
Dimensions (board)	0.3" x 1.7" x 3.7" (8 x 43 x 93 mm)
Weight (optic module)	1.2 oz. (33 g)
Operating Temperature	-4° to 140° F (-20° to 60° C)
Storage Temperature	-40° to 185° F (-40° to 85° C)
Operating Humidity	< 90% RH, non-condensing

Optical

Optic Module	SecuGen OPP03™
Image Resolution	500 DPI ± 0.2 %
Image Size (pixels)	260 x 300
Image Grayscale	256 shades (8-bit gray level)
Distortion (nonlinear)	< 0.1 %
Effective Sensing Area	0.5" x 0.6" (13 mm x 15 mm)
Sensing Prism Hardness	750 Hk (6.8 Mohs)
Light Source	Red LED
Lifetime (typical)	60,000 Hours
Ambient Light Condition	Up to 50,000 Lux (with Smart Capture algorithm)

Electrical

Operating Voltage	5 V ± 5 %
Power Consumption (max)	1 W
Current Consumption (standby)	160 mA
Current Consumption (operating)	200 mA
ESD Tolerance	> ± 15 kV

Communication

Interface	RS 232
External I/O Port	UART port 1 channel / sensor interface 2 Switch input / 1 Wiegand output 2 Outputs (open collector) / 1 Reset input

Features

CPU	E-32XS 120 MHz (Hyperstone)
RAM	512 KB SRAM x2
ROM	4 MB Flash (4,400 users or 8,800 templates)
Image Capture Speed	10 to 20 frames/second
Image Transfer Speed	9.6 to 115.2 kbps
Template Size	256 to 400 bytes
1:N Matching Speed:	For 200-user database:
Average	230 users/second
No match registered	25 users/second

Available Development Tools

FDA02 Developer Kit with Windows SDK (95/98/Me/NT/2000)
FDA02 Firmware Programming Kit

DK includes: AC/DC adapter & DB9 cable
Main controller emulator demo
Database editor
Log file viewer
Main controller source code
Protocol info & header files



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FDU02™ Fingerprint sensor for USB devices

Physical

Dimensions (optic module)	2.4" x 0.8" x 1.3" (62 x 21 x 32 mm)
Dimensions (board)	(fits within recesses of optic module)
Weight (optic module)	1.2 oz. (33 g)
Operating Temperature	32° to 104° F (0° to 40° C)
Storage Temperature	-40° to 185° F (-40° to 85° C)
Operating Humidity	< 90% RH, non-condensing

Optical

Optic Module	SecuGen OPP03™
Image Resolution	500 DPI ± 0.2 %
Image Size (pixels)	260 x 300
Image Grayscale	256 shades (8-bit gray level)
Distortion (nonlinear)	< 0.1 %
Effective Sensing Area	0.5" x 0.6" (13 mm x 15 mm)
Sensing Prism Hardness	750 Hk (6.8 Mohs)
Light Source	Red LED
Lifetime (typical)	60,000 Hours
Ambient Light Condition	Up to 5,000 Lux

Electrical

Operating Voltage	5 V ± 5 %
Power Consumption (max)	400 mW
Current Consumption (standby)	0.45 mA
Current Consumption (operating)	80 mA
ESD Tolerance	> ± 15 kV

Communication

Interface	USB 1.1
Data Transfer Mode	Bulk mode
Image Capture Speed	2.38 frames/second
Image Transfer Speed	308 kbps

Features

Device Driver	Updated for FDU02 (provided)
Operating Systems Supported	Windows 98/Me/2000/XP/2003, CE, CE.NET
Software Compatibility	Compatible with all software designed for FDU01 devices (only requires updated device driver files)

Available Development Tools

Software Developer Kits
(in SDK Collection)

SDK Collection main features:
FDx SDK (low-level APIs)
SecuBSP SDK (high-level APIs)
SecuSearch SDK (1:N matching)
SecuGen BioAPI BSP module

Open The World With Your Fingertip!®

